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RESEARCH ARTICLE

Description of new species of Genus *Hamataliwa* (Araneae, Oxyopidae) from India

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Abstract

New species of Lynx spider, *Hamataliwa sagitta* sp. nov. is described from Vazhani dam area, a part of Western Ghats of Kerala, India. Detailed morphological description, diagnostic features and illustration of the female of this species is given.

Keywords

Lynx spider, Kerala, Taxonomy.

Introduction

Hamataliwa is a genus of lynx spiders and was established by Keyserling (1887) with the type species *H. grisea* Keyserling 1887. *Hamataliwa* Keyserling, 1887 is the second largest genus of the family Oxyopidae and currently contains 87 species (World Spider Catalog 2023) with 9 species reported from India. Taxonomic works on *Hamataliwa* from India are not enough. Only a few works are available. Dhali et al. (2017) did taxonomic works on spiders which inhabit the litter and ground of the Reserve forests of Dooars, West Bengal. They identified a new species of *Hamataliwa* called *H. hellia* and redescribed *H. incompta*. Amulya et al. (2022) identified two *Hamataliwa* species

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from Kerala, including *H. crista and H. rhombiae.* Sen & Sureshan (2022), located *H. indica* in the Western Ghat of India and redescribed *H. ovata* and *H. reticulata* as well. Tang & Li (2012), gave the first report on *H. subhadrae* identified by Tikader (1970) as *O. subhadrae.* Asalatha & Prasadan (2020) did the first report of *H. pentagona* Tang & Li, 2012 which was only identified from China earlier. Members of these spider genus do not make webs and remain hidden in the low shrubs; therefore, it is difficult to capture (Mouly et al. 2018) also most of them are cryptic to the soil colour. This genus is distinguished from other genera by following characteristics such as legs III and IV subequal or III longer than IV. Eyes of the posterior row, in most, with the medians closer to the laterals than to each other (Gajbe 2008). Brady (1964) redefined *Hamataliwa* by giving more importance to the structure of male and female genitalia. Many Hamataliwa members are morphologically similar but different in genitalic structure. This caused the misidentification of the *Hamataliwa* members in its preliminary observation. The present study deals with the record and description of a new species of the genus *Hamataliwa* female collected from the Vazhani dam of Kerala, India.

Material and methods

Specimens were collected from the premises of tropical rain forests of the Western Ghats of Kerala, India. Collection is done by hand picking. The specimens were preserved in 70% ethanol and studied with a Leica M205 C stereomicroscope. The microphotographic images were taken using a Leica DMC4500 digital camera attached to a Leica M205 C stereomicroscope, with the software package Leica Application Suite (LAS), version 4.3.0. LAS montage facility. The image plates were prepared using Adobe Photoshop CC version 14.0 x 64.

Epigyne was dissected and cleared in a 10% potassium hydroxide (KOH) solution. It cleared and photographed. Leg measurements are shown as total length (femur, patella, tibia, metatarsus, tarsus). All measurements are in millimetres (mm). The studied specimen was deposited in the reference collection at the Centre for Animal Taxonomy and Ecology (CATE), Department of Zoology, Christ College (Autonomous), Irinjalakuda, Kerala, India.

Abbreviations used in the text and figures are as follows (Tang & Li, 2012; Baehr et al., 2017; Lo et al., 2021): AL = abdomen length, ALE = anterior lateral eye, AME = anterior median eye, AW = abdomen width, CD =copulatory duct, CL = cephalothorax length, CO = copulatory opening, CW = cephalothorax width, E = epigastric plate, FD = fertilization duct, PLE = posterior lateral eye, PME = posterior median eye, S = spermatheca, TL = total length.

Spination abbreviations: do = dorsal, pl = prolateral, rl = retrolateral, v = ventral.

Results

Taxonomy

***Hamataliwa* Keyserling, 1887**

Type species: *Hamataliwa grisea* Keyserling, 1887
***Hamataliwa sagitta* sp. nov.**
(Figs 1–2)

Etymology: The noun Sagitta is the Latin word for arrow. The arrangement of the eyes in this species is arrow shaped.

Materials examined

Holotype: India •Kerala •Thrissur• Vazhani Dam (Fig. 3); ♀; 10.6412° N, 76.3084° E; 28.IX.2021; Amulya Baji K leg.; Original number CATE 809273. **Paratypes**: same location**;** ♀; 25.X.2021; Amulya Baji K leg.; Original number CATE 809274 • 1 subadult ♀;22. X. 2021; Amulya Baji K leg.; Original number CATE 809275 •1 subadult ♀; 20.X. 2021; Amulya Baji K leg; Original number CATE 809276.

Diagnosis: *H. sagitta* sp. nov. somewhat similar to *H. ovata* (Biswas, Kundu, Kundu, Saha & Raychaudhuri, 1996). However, it can be distinguished from the latter by the following combination of characters: 1) The copulatory duct forms a "V" shaped and short in *H. sagitta* whereas it "U" shaped and long in *H. ovata.* 2) The distal end of the copulatory duct "spoon head" shaped in *H. sagitta* whereas it "oval shaped" in *H. ovata.* 3) The shape of spermatheca oblong shaped in *H. sagitta* whereas it elongated in *H. ovata.* 4) Fertilisation duct long and non-curved in *H. sagitta* whereas it long and curved in *H. ovata.*

Description: Description of holotype female (Fig. 1A–B): TL 3.50; CL 1.06, width 1.79; abdomen length 2.44, width 1.47. Carapace dark brown, profusely haired, pear-shaped with the light brown region extending between PME to the posterior end of the carapace. Fovea longitudinal and reddish. In dorsal view, eyes are arranged in four rows with AER strongly recurved and PER procurved. Clypeus high without lines. Ocular area length 0.67, width 1.08. Eye diameters and inter-distances: AME 0.09, ALE 0.19, PME 0.15, PLE 0.17, eye sizes ALE> PLE > PME >AME; AME-AME 0.15, AME-ALE 0.13, PME-PME 0.56, PME-PLE 0.31, ALE-PLE 0.24, ALE-ALE 0.37, PLE-PLE 1.08. Clypeus height 0.29; Chelicera length 0.44, downward with one promarginal tooth, two retromarginal teeth. Fang is broad at the base and narrowed towards the tip but less pointed. Endite and labium longer than wide. Sternum with scattered long and short hair. Abdomen inverted ancient pot-shaped, densely haired, light brown, black band with slightly dark brown border on the lateral sides. In ventral

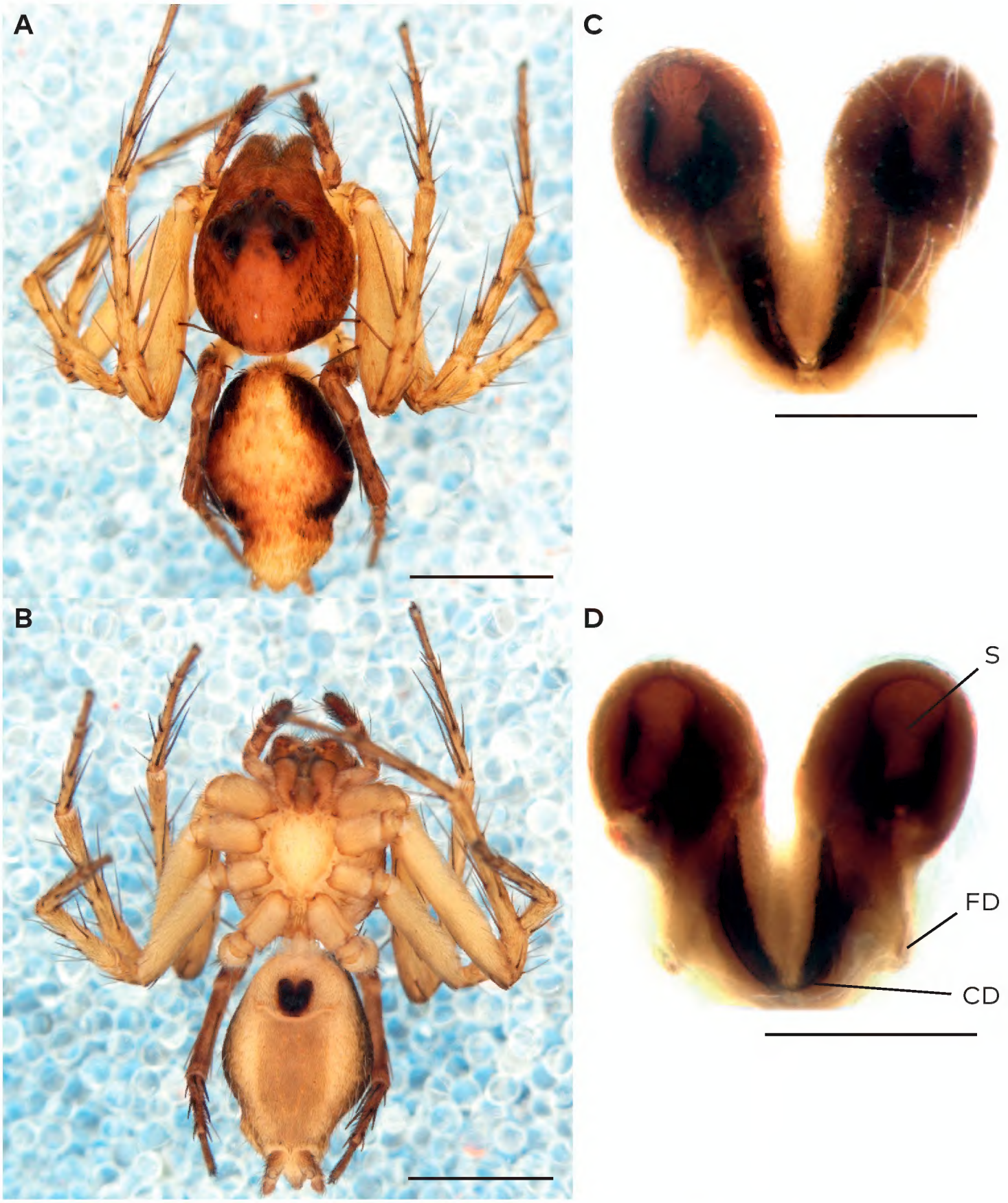

Figure 1. *Hamataliwa sagitta* sp. nov., holotype female: **A** habitus, dorsal view; **B** same, ventral view; **C** Epigyne; **D** Vulva. Scale bars: **A**, **B** = 1 mm; **C**, **D** = 0.2 mm.

view, the broad coffee-coloured longitudinal band extends from the epigastric furrow to the spinnerets. Legs are covered with many conspicuous long spines. Two tarsal claws. Absence of apical claws in pedipalp. Measurements of pedipalps and legs: pedipalp 1.31 (0.19 + 0.35 + 0.46 + 0.31), I 6.83 (2.03 + 0.79 + 1.68 + 1.48 + 0.85), II 6.50 (2.17 + 0.74+ 1.67 + 1.13 + 0.79), III 4.62 (1.62 + 0.70 + 0.84 + 0.88 + 0.58), IV 3.02 (0.56 + 0.97 + 0.55 + 0.49 + 0.45). Leg formula: I>II>III>1V. See Table 1 for spination.

Genitalia (Fig. 1C–D, Fig. 2A–B). Epigyne is highly sclerotised; oval shaped with anterior margin is W-shaped; copulatory duct distant ends are connected with a

Table 1. Spination of leg podomeres of *Hamataliwa sagitta* sp. nov

♀	**Leg I**	**Leg II**	**Leg III**	**Leg IV**	**Palp**
Femur	pl 2 do1 rl 2 v 0	pl1 do2 rl 1v0	pl 2 do2 rl 2v0	pl1 do1 rl1 v0	pl1 do1 rl1 v0
Patella	pl 1 do1 rl 1 v 0	pl 2 do 2 rl2 v0	pl 3 do2 rl 2 v0	pl2 do2 rl1 v0	pl2 do2 rl 2v0
Tibia	pl 3 do 3 rl 3 v 0	pl 3do2 rl3 v0	pl2 do 2 rl 2v 0	pl2 do1 rl2 v0	pl3 do3 rl1 v0
metatarsus	pl 3 do1 rl 2 v 0	pl2 do2 rl2 v0	pl2 do 2rl 0 v0	pl2 do 2rl 2v0	
Tarsus	spineless	spineless	spineless	spineless	Spineless

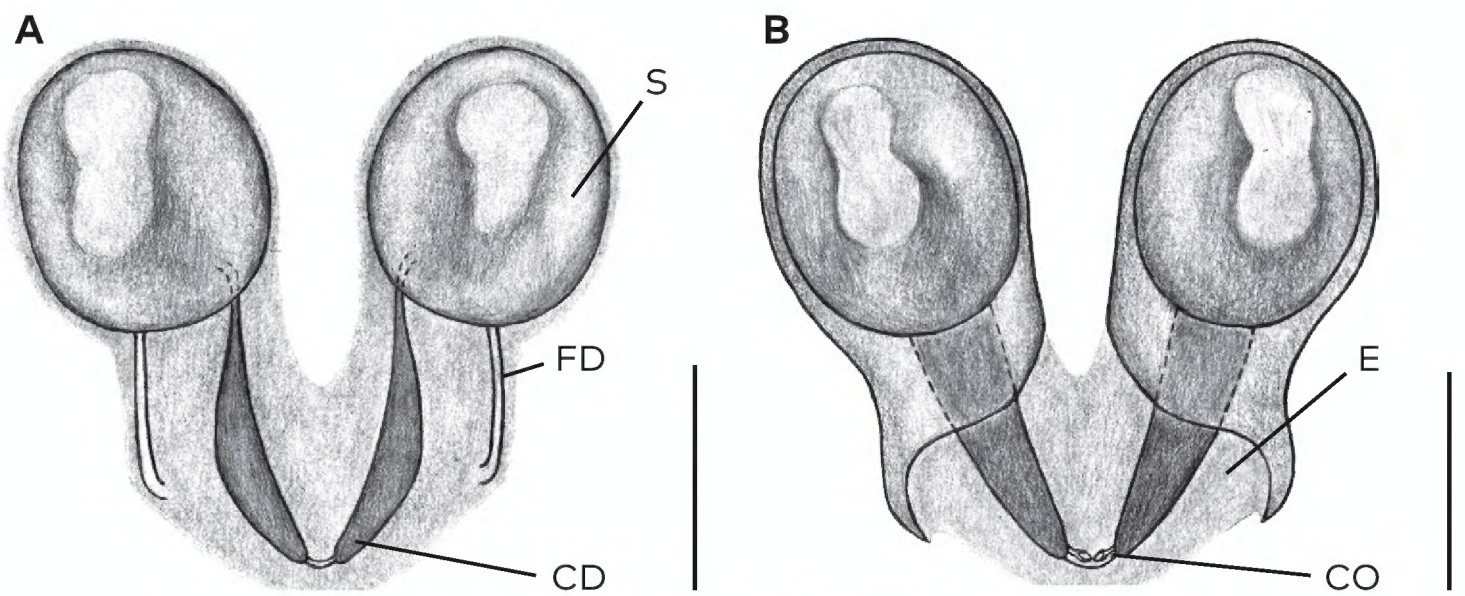

Figure 2. *Hamataliwa sagitta* sp. nov.: **A** Vulva; **B** Epigyne. Scale bars: **A**, **B** = 0.2 mm.

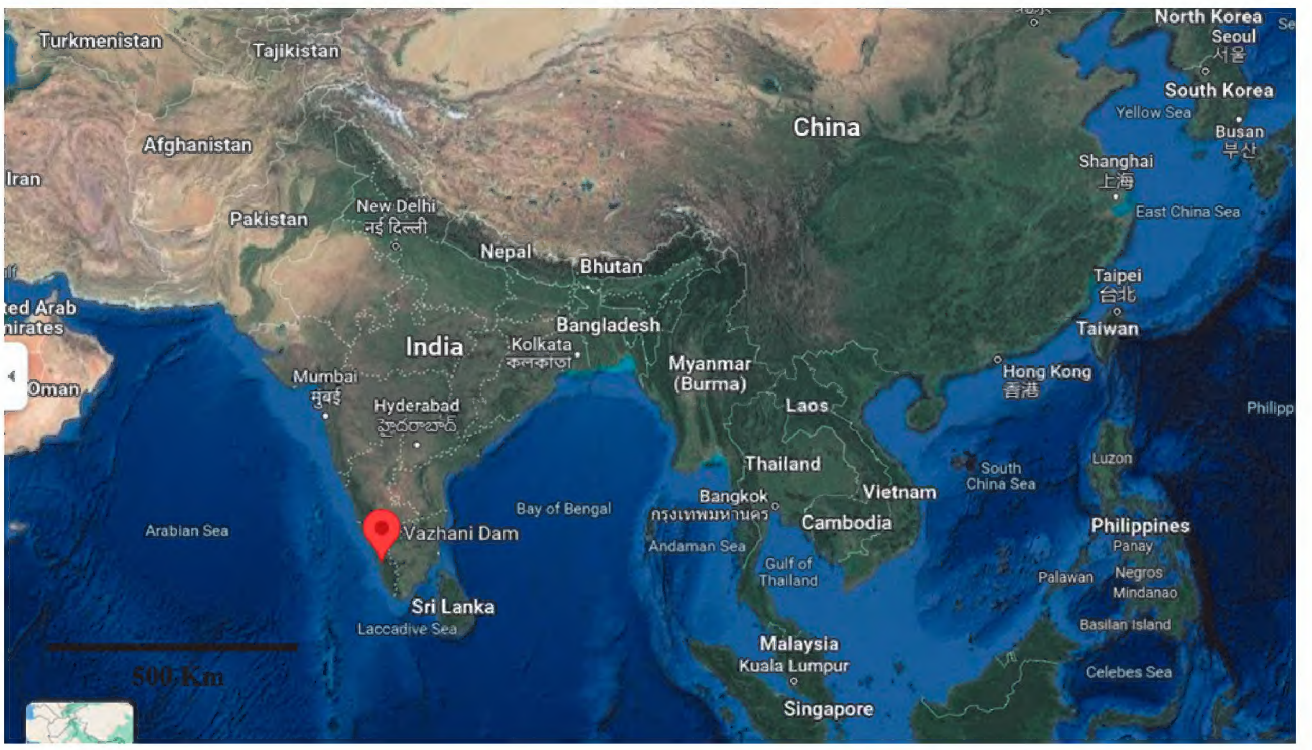

Figure 3. Type locality of *Hamataliwa sagitta* sp. nov. © Google.

narrow tube-like structure. Spermathecae is oval-shaped and arranged on the anterior of the copulatory duct. Copulatory duct starts from the spermatheca and thickened towards the distal side and have spoon headed opening. The fertilisation duct is a narrow tube and its end faces towards the copulatory ducts from lateral sides.

Male: Unknown

Variations: Four female specimens were measured to quantify the morphological variations. Values are mean ± SD of females. Total length 3.50 ± 0.4; cephalothorax length 1.06 ± 0.2, width 1.79 ± 0.2; abdomen length 2.44 ± 0.3, width 1.47 ± 0.2. Diameters and inter-distances-AME 0.09 ± 0.02, ALE 0.19 ± 0.02, PME 0.15 ± 0.02, PLE 0.17 ± 0.01. AME -AME 0.15 ± 0.02, AME-ALE 0.13 ± 0.03, PME-PME 0.56 ± 0.01, PME-PLE 0.31 ± 0.02, ALE-PLE 0.24 ± 0.04, ALE-ALE 0.37 ± 0.03, PLE-PLE 1.08 ± 0.02. Clypeus height 0.29 ± 0.09. Palp1.31 ± 0.2, leg I 6.83 ± 0.4, leg II 6.50 ± 0.1, leg III 4.62 ± 1.2, leg IV 3.02 ± 0.3.

Distribution: India (Kerala).

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